CITY OF TORONTO
PLANNING AND DEVELOPMENT DEPARTMENT

334/02170
Policy
September 3, 1982.

To: City Services Committee

Subject: Joint Metro/TTC "Accelerated Rapid Transit Study" (ARTS) Report

Origin: The City Services Committee at its meeting of July 7, 1982 (c71csc82041:44)

Comments:

1. HISTORY

At a meeting of June 16, 1982, the Metropolitan Economic Development and Planning Committee had before it the "Summary Report" of the Joint Metro/TTC "Accelerated Rapid Transit Study" and six related background reports. This joint study will subsequently be referred to, in general, as the ARTS study. The "Summary" and background reports are listed below with the abbreviated titles, by which they will be referred to in the remainder of this report, given in parenthesis:

Background Report 1: Functional Design (Design)

Background Report 2: Demand Analysis (Demand)

Background Report 3: Transit Operations Analysis (Operations)

Background Report 4: Land Use and Environmental Review (Land Use)

Background Report 5: Surface Transit Improvements (Surface Transit)

Background Report 6: Waterfront and Central Area Options (Waterfront)

Metro/TTC Rapid Transit Study: Summary Report (Summary)

The ARTS Study was approved by Metropolitan Council in May, 1981, and had two stated objectives:

1. to consider and review specific transit improvements for possible inclusion in the TTC Capital Works Program;

2. to recommend to Metropolitan Council, if necessary, amendments to the Metropolitan Official Plan to accommodate the future expansion of transit facilities within Metropolitan Toronto.

In January, 1980, the terms of reference of the ARTS Study were broadened to include discussion of the system-wide implications of a Waterfront ICTS line as part of the evaluation of options for major transit lines in Metro.

The conclusions and recommendations of the ARTS Study are presented in the Summary report. The background reports present the technical details of the analysis and in certain areas this work is still continuing. The recommendations in the Summary report read as follows:

"1. a rapid transit 'relief' line from Union Station to the Danforth subway in the vicinity of the Greenwood yards and an east-west line along Sheppard Avenue from the Yonge subway to the Scarborough Town Centre be approved in principle;

2. the Technical Transportation Planning Committee be authorized to undertake feasibility studies on the aforementioned two lines; the study of the 'relief' line to be combined with a feasibility study of the proposed Waterfront line from Union Station to Exhibition Place which would include an assessment of options for extending the line north-westerly to the Bloor subway;

3. the Toronto Transit Commission be:

   a) authorized to prepare a plan for the implementation of surface transit improvements to and within the Central Area, such plan to identify any required transit priority measures, and

   b) requested to report on the feasibility of implementing various measures to increase the capacity of the existing subway system;

4. Metropolitan Planning staff, in consultation with City of Toronto and Toronto Transit Commission staff, be authorized to develop a program to monitor employment growth and

development proposals in the Central Area and to determine their effect on the transportation system;

5. the Commissioner of Planning be requested to report as soon as possible on the content and timing of amendments to the Metropolitan Official Plan and the requirements of The Environmental Assessment Act, in conjunction with the aforementioned recommendations; and

6. the Technical Transportation Planning Committee initiate discussions with officials of the Province and the Region of Peel with respect to developing a strategy for coping with future travel across the west Metro boundary."

The Metropolitan Economic Development and Planning Committee decided to:

a) refer recommendations 1 and 2, together with the ARTS study reports, to the Area Municipalities for comments by Dec. 31, 1982;

b) adopt recommendations 3 to 6 inclusive of the ARTS study.

c) adopt the further recommendation that Metro/TTC staff prepare terms of reference and cost estimates for the feasibility studies referred to in recommendation 2 of the ARTS study and to report back on this for the Dec. 31, 1982, deadline.

d) authorize the Metropolitan Toronto Chairman, the Chairman of the Toronto Transit Commission, the Chairman of the Metropolitan Transportation Committee, the Chairman of the Metropolitan Economic Development and Planning Committee and the Chairman of the Metropolitan Sub-Committee on Economic Development to meet with the Premier of Ontario and the Provincial Minister of Transportation and Communications with respect to obtaining a commitment for long-range funding of the transit lines proposed in recommendation 2 of the ARTS study.

e) direct the Metropolitan Commissioner of Planning to prepare a written response to the Area Municipalities regarding certain questions relating to the status of the Waterfront ICTS proposal.

The written response referred to in item (e) above is included for information in Appendix A of this report.

The matters referred to in item (a) above came before the City Services Committee at its meeting of July 7, 1982, at which time the Committee requested the City Commissioner of Planning and Development and the City Commissioner of Public Works to report separately on these matters for consideration at its September 8, 1982, meeting.

2. THE PURPOSE OF THIS REPORT.

This report presents an interim analysis of the ARTS study. The major issues presented by the ARTS study are addressed without going into all the details of each Background report. This report raises a number of policy issues which have to be addressed before a final City response to the ARTS Study can be developed and indicates areas of further analysis which need to be completed before Metro's December deadline for comments.

3. MAJOR CONCLUSIONS OF THE ARTS STUDY

3.1 Initial Options

The ARTS Study began by evaluating 28 possible rapid transit alternatives in the Metro area. This list was subsequently trimmed to 4 options for detailed study (see Map 1):

a) east-west line north of Highway 401 (Finch/Sheppard);

b) east-west line south of Highway 401 (Eglinton);

c) radial lines serving the Central Area (along N.E. and N.W. rail corridors); and

d) Central Area circulation lines (Waterfront and Spadina Ave. lines).

3.2 Final Choices

As evidenced in recommendations 1 and 2 of the Summary report, elements of options (a) and (c) above were finally selected as the recommended transit choices. Basically, the ARTS Study concludes that by 1991 both an east-west, suburban rapid transit line (along Sheppard Ave.) and a Downtown "relief" line (Union Station to Donlands Station) may be required (see Map 2). Both lines are estimated to cost around $400 million each to build and each could be the first stage of an extended Metropolitan rapid transit system.

ACCELERATED RAPID TRANSIT STUDY — October 1981

REF. No. 334/02170

MAP 1
A.R.T.S. RAPID TRANSIT OPTIONS

CITY OF TORONTO PLANNING AND DEVELOPMENT DEPARTMENT

POLICY RESEARCH AND INFORMATION SEPTEMBER, 1982

PROPOSED "RELIEF" LINE ABOVE GROUND

PROPOSED "RELIEF" LINE BELOW GROUND

MAP 2

A.R.T.S. PROPOSED "RELIEF" LINE

CITY OF TORONTO PLANNING AND DEVELOPMENT DEPARTMENT

POLICY RESEARCH AND INFORMATION DIVISION AUGUST, 1982

. 334/02170

3.3 Needs and Priorities

The two recommended transit options are described in the ARTS Study as being needed for different reasons:

i) Sheppard Line - is needed to link the North Yonge and Scarborough Town Centres and to support the long-term, strategic, land-use planning objective of deconcentration;

ii) Relief Line - is needed for operational reasons to provide additional transit capacity south of Bloor Street to ease anticipated future crowding on the Yonge subway south of Bloor and at the Bloor/Yonge interchange during rush-hours.

No conclusion is made as to which of the two lines is of higher priority but, due to the estimated seven or eight years lead-time required to build either, the recommendation is made that they both be approved now in principle. In the meantime, the ARTS Study proposes that feasibility studies of the two lines be undertaken over the next two years by which time it is expected that the question of priorities will become clearer.

3.4 The Waterfront Line

The recommended feasibility studies include the proposal that the study of the relief line be combined with a feasibility study of the proposed Waterfront line from Union Station to Exhibition Place. In looking at the proposal for a Waterfront rapid transit line in general, the Summary report states:

> "It is therefore concluded that a Waterfront line be considered only in conjunction with additional facilities (possibly line-haul) serving the downtown core and providing relief to the Yonge subway" (p.24).

The ARTS Study implies that a Waterfront line on its own would only be of use in accommodating recreational demands, such as those of Exhibition Place and Ontario Place, during off-peak periods and this is currently not a priority concern.

If the Waterfront line were to be built as an extension of the relief line then, the ARTS Study concludes, its preferred alignment would be south of Front Street with a direct connection to Union Station and that a "line" option is generally preferred to a "loop" option for this route.

3.5 Rapid Transit Technology

The ARTS Study makes no explicit recommendation regarding the type of rapid transit for the Sheppard Ave., Relief and Waterfront lines. In the Background reports on Design (p.5) and Transit Operations (p.17), a technology similar to that of the ICTS line now being implemented in Scarborough is assumed for comparative purposes in evaluating the four, short-listed, route options considered in the ARTS study. As the Transit Operations report states:

> "This, however, does not preclude other forms of technology such as conventional heavy rail transit, streetcar, etc., being chosen. The important aspect to note in the new rapid transit design is that it is based on vehicles running along a fully grade-separated right-of-way" (p.17)."

As noted in the Land Use report (pg.1), such a rapid transit line may run above or below ground. For example, in the Design report, the north-west leg of the radial transit option is shown as running underground from the Queen/Spadina area to Dundas/Bloor. The Sheppard, Relief and Waterfront lines appear to be designed to run above grade (Design report, pp.7-8).

Presumably, the feasibility studies referred to in recommendation 2 of the Summary report will address the question of the type of technology to be employed on the proposed rapid transit lines. To this point, however, the ARTS Study seems to imply a preference for the ICTS technology.

3.6 Surface Transit Alternatives

The ARTS Study evaluates a Surface Transit Improvement Option, known as the "no build" option. This option is designed to assess the extent to which incremental surface transit improvements can meet projected 1991 travel demands without the level of capital expenditure required for new rapid transit construction. The Surface Transit and Waterfront reports present an encouraging picture of the role that surface transit could play in accommodating 1991 travel demands. However, the potential of the surface transit option is down-played in the Summary report which recommends in favour of the rapid transit solution.

Recommendation 3 of the Summary report directs TTC staff to prepare a surface transit improvements plan to and within the Central Area and to study the feasibility of increasing the capacity of the existing subway system while, in the text of the report, "... a Spadina LRT facility (is) identified for further

study" (p.4). But, the broad conclusion of the ARTS Study with regard to surface transit in the Central Area is:

> "While the levels of excess transit demand could theoretically be accommodated by means of surface transit improvements, it is uncertain whether sufficient Central Area road capacity exists both to handle projected 1991 levels of auto travel and to allow for the implementation of reserved transit lanes assumed necessary for the required surface transit improvements. In any event, it is likely that an additional rapid transit facility serving the Central Area will be required after 1991, assuming that employment growth eventually exceeds the 60,000 level assumed in this study" (Summary report, p.32).

3.7 Roads

Although the focus of the ARTS Study is on future transit needs in Metro, some conclusions are drawn concerning the expected situation on the roads. A separate "Metropolitan Roads System Review" to evaluate the need for additional road capacity over the next decade is currently being carried out by Metro staff under the overall direction of the Metropolitan Technical Transportation Planning Committee (MTTPC).

The ARTS Study concludes that auto travel into the Central Area will increase by a relatively modest 8% over the 1979-91 period. However, it is expected there will be major increases in auto traffic in suburban areas, particularly across the Mississauga/Etobicoke boundary in the west. In fact, the large increases predicted in auto travel across the west Metro and suburban cordons could not be accommodated on the existing road system and the ARTS Study concludes that "... the diversity of destinations suggests that a single rapid transit line is not the answer" (p.29, Summary report).

When considering possible improvements to surface transit, both in the Core and suburban areas, to reduce auto travel, the ARTS Study repeatedly makes the point that such improvements will require priority measures for transit that will compete with the demands of autos for available road space. Consequently, the Surface Transit report concludes that the surface transit proposals should be "subject to detailed investigation ... as part of the 'Metropolitan Roads System Review' to assess the costs and benefits of transit priority" (p.21).

3.8 The Pattern of Future Trip Growth

Exhibit 5, p.14 of the Demand report, presents 1979-91 population and employment forecasts for sub-areas within the Metropolitan region (see Tables B.1 and B.2 in Appendix B). These projections basically define the future pattern of trip growth.

Of a total regional population growth (1979-1991) of 471,000 persons, only 41,000 (9%) of this increase occurs in Metro, with most of the Metro growth in north and east Scarborough. The overwhelming proportion of population growth is forecast to occur outside Metro, particularly in the west and north-west regions of Halton, Peel and York.

In contrast, of the 248,100 projected increase (1979-91) in regional employment, 40% is expected to locate in Metro, with 24% in the Central Area alone. Thus, the ARTS study predicts a continued imbalance in the regional pattern of population and employment growth. The projections show that the large population increases of Peel and York Regions are not offset by matching employment increases and the study region's major employment centre, the Central Area, continues to experience substantial employment growth.

On the basis of this pattern of population and employment growth, the greatest increases in rush-hour traffic over the 1979-91 period are expected, in the ARTS Study, to occur at the Metro/Regional boundary. Exhibit 3, page 9, of the Summary report shows the following peak-hour increase in person trips for the three cordons in the Study area:

1.	Metro Boundary	35,000 person trips	(49% 1979-1991)
2.	Suburban Cordon	24,000 person trips	(19% 1979-1991)
3.	Railway Cordon	26,000 person trips	(21% 1979-1991)

These figures indicate that the regional transportation situation is likely to pose questions in the future at least equally important as those related to the development of transit services within the Metropolitan area. This conclusion is not sufficiently emphasized in the ARTS Study, though future capacity problems at the west Metro and suburban cordons are recognized and the issue is referred to in recommendation 6 of the Summary report.

3.9 Official Plan Compatibility

The ARTS Study concludes the proposed Sheppard Avenue rapid transit line would "best satisfy Metropolitan and area municipal objectives ... (and) ... meet(s) the most immediate

decentralization objectives by serving both the Scarborough Town Centre and the North Yonge Centre" (Summary report, p.33).

The full radial line proposal is acknowledged to be inconsistent with the Metro Official Plan and the plans and policies of four of the six area municipalities, including the City of Toronto. However, the relief line is said to represent a more modest proposal which "... may be acceptable in the context of current Official Plan policies, both City of Toronto and Metropolitan" (Summary report, p.34).

The ARTS Study concludes that the adoption of either the Sheppard Ave. line or the relief line would require amendments to the Metropolitan Official Plan.

4.0 CONTEXT

4.1 Office Growth

The ARTS Study assumes that employment in the Central Area will increase by 60,000 jobs over the 1979-1991 period. This is described as an "optimistic" or high (Summary report, p.12) estimate of employment growth, being partly "... dependent on the level and timing of development in the Waterfront area south of Front Street" (p.5). Assuming all this employment growth to be in the office sector, present assumptions regarding the amount of floor space per worker (25.0 sq.m) and an acceptable vacancy rate (say, 5%) would require about 1 575 000 sq.m (17.0 m. sq.ft.) of office space to be built and occupied over the 1979-91 period to accommodate this 60,000 employment increase.

In relation to past trends, a 1 575 000 sq. m growth in office space in the Central Area over a 12-year period appears feasible. In the Central Core Area (which accounts for virtually all office space in the larger Central Area), the amount of built office floor space increased by 873 000 sq. m (9.4 m. sq.ft.) over the six and a half year period from June 1975 to January 1982. This implies an average, annual rate of office space construction of 134 300 sq. m (1.44 m. sq.ft.) a year. Projecting this rate forward over a 12-year period results in an additional 1 611 600 sq. m (17.3 m. sq.ft.) of office floor space, very close to the amount implied by the ARTS Study employment projection.

In January, 1979, there were 4 720 000 sq. m (50.8 m. sq.ft.) of office development in the Central Core Area. If this is to expand by around 1 575 000 sq. m to accommodate the 1979-91 employment increase assumed in the ARTS Study, then the implication is that by 1991 the Central Core Area will contain approximately 6 295 000 sq. m (68.0 m. sq.ft.) of office floor space. This estimated 1991 floor space figure is close to the 6 549 000 sq. m (70.5 m.

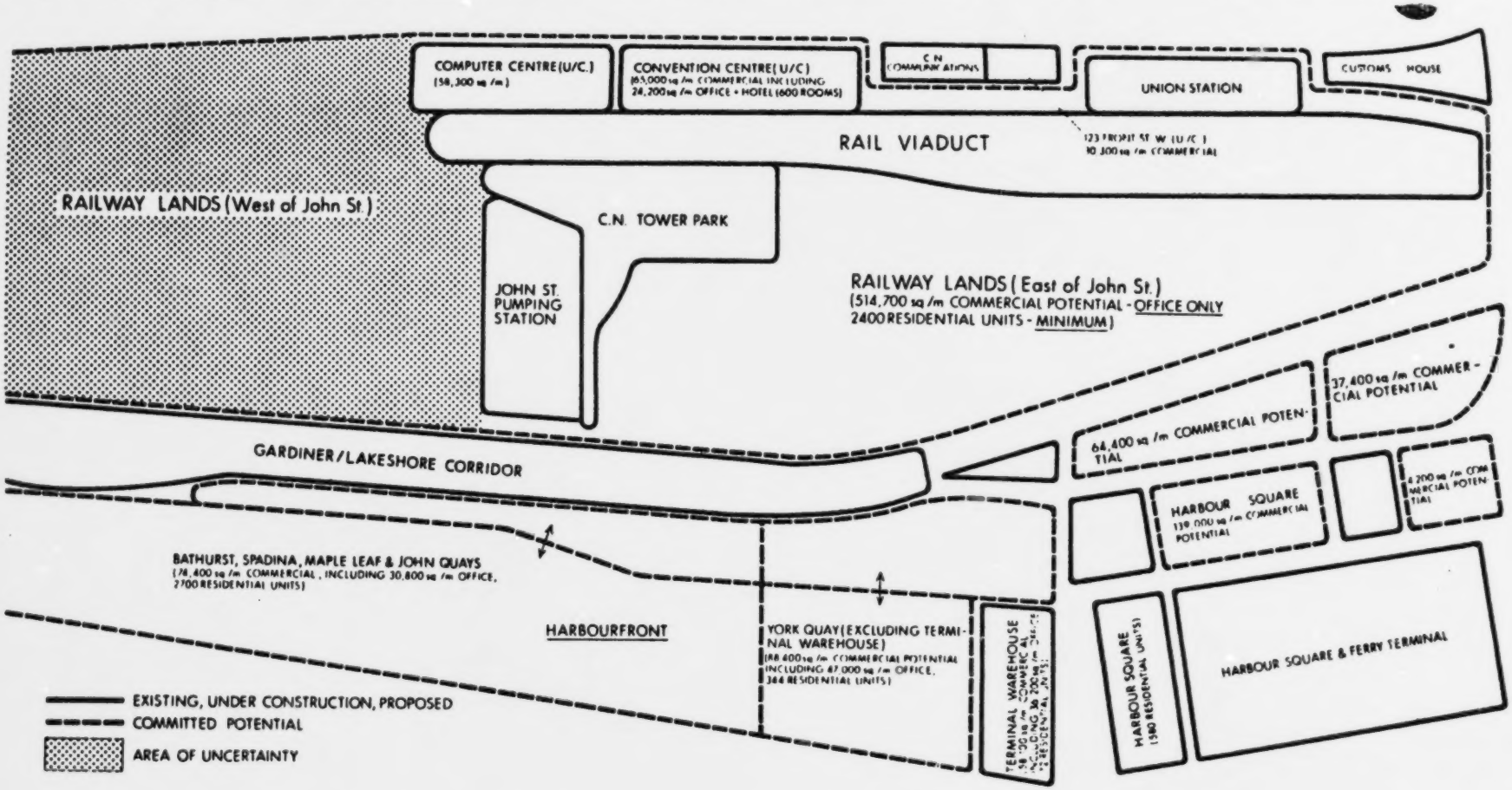
sq.ft.) development limit estimated in the Central Area Plan on the basis of Parkinson's "realistic" transportation capacity figure. Under the originally proposed zoning provisions of the Central Area Plan, it was not expected that this 6 549 000 sq. m limit would be exceeded before the end of the century. In this context, it can be seen that a 60,000 employment increase over the 1979-91 period will place the existing transit system serving the Central Core under greater strain earlier than was originally anticipated.

4.2 Development South of Front Street

The future of the City's Waterfront, taken as the general area south of Front Street between Bathurst and Jarvis Streets, has a considerable bearing on the issue of improved transit services. This area is currently predominantly occupied by low intensity industrial, transportation and communication uses and is presently served by limited surface transit. The eastern part of the Railway Lands, which is within walking distance of Union Station, is the only area with good access to rapid transit and commuter rail services. Furthermore, road access to this general Waterfront area is difficult with the Gardiner/Lake Shore corridor operating close to capacity and presenting a barrier to local traffic movements.

Current land use controls permit approximately 930 000sq. m (10.0 m. sq.ft.) of additional office development in the Waterfront area between Spadina Avenue and Yonge Street. A small part of this potential is currently being realized by office space construction in the Terminal Warehouse and 123 Front Street West developments. There are also known proposals for office development in the Harbourfront lands and the Convention Centre project, and the Royal Bank Computer Centre (at 325 Front St. W.) will also be an intensive employment generator. However, land use plans for two major areas, the Railway Lands and Toronto Harbour Commissioner's (THC) lands, have yet to be finalized and it is not known what changes these final plans may bring to currently permitted levels of office development in the Waterfront.

Map 3 provides a more detailed description of the status and level of office development currently permitted in various parts of the Waterfront. However, until emerging land use plans for certain parts of the Waterfront are finalized, it is difficult to be specific about the future transportation needs of this area. At currently permitted levels of development, there appear to be some significant transportation problems in serving all the employment growth that could occur. Road capacity constraints require that any future growth in peak-period trips to this area be almost entirely by transit.


COMPUTER CENTRE(U/C.)
(50,300 sq /m)
CONVENTION CENTRE(U/C)
(65,000 sq /m COMMERCIAL INCLUDING
24,200 sq /m OFFICE + HOTEL (600 ROOMS)
C.N. COMMUNICATIONS
UNION STATION
CUSTOMS HOUSE
RAIL VIADUCT
123 FRONT ST W (U/C)
10,300 sq /m COMMERCIAL
RAILWAY LANDS (West of John St.)
C.N. TOWER PARK
JOHN ST. PUMPING STATION
RAILWAY LANDS (East of John St.)
(514,700 sq /m COMMERCIAL POTENTIAL - OFFICE ONLY
2400 RESIDENTIAL UNITS - MINIMUM)
37,400 sq /m COMMERCIAL POTENTIAL
64,400 sq /m COMMERCIAL POTENTIAL
GARDINER/LAKESHORE CORRIDOR
HARBOUR SQUARE
139,000 sq /m COMMERCIAL POTENTIAL
4,200 sq /m COMMERCIAL POTENTIAL
BATHURST, SPADINA, MAPLE LEAF & JOHN QUAYS
(78,400 sq /m COMMERCIAL, INCLUDING 30,800 sq /m OFFICE,
2700 RESIDENTIAL UNITS)
HARBOURFRONT
YORK QUAY (EXCLUDING TERMINAL WAREHOUSE)
(88,600 sq /m COMMERCIAL POTENTIAL
INCLUDING 67,000 sq /m OFFICE,
344 RESIDENTIAL UNITS)
TERMINAL WAREHOUSE
HARBOUR SQUARE
(580 RESIDENTIAL UNITS)
HARBOUR SQUARE & FERRY TERMINAL
EXISTING, UNDER CONSTRUCTION, PROPOSED
COMMITTED POTENTIAL
AREA OF UNCERTAINTY

MAP 3

DEVELOPMENT POTENTIAL PERMITTED IN THE CENTRAL WATERFRONT

CITY OF TORONTO PLANNING AND DEVELOPMENT DEPARTMENT

POLICY RESEARCH AND INFORMATION — SEPTEMBER, 1982

REF. No. 334/02170

4.3 Regional Implications

Prospects for continued employment growth in the Central Area have to be matched against projected population trends. These trends indicate a stabilization of Metro's population while growth continues in the surrounding regions, particularly Peel and York regions. Appendix B of this report presents the 1979-91 population and employment projections used in the ARTS Study and provides calculations regarding changes in the ratio of employment to population in the various sub-areas over the forecast period. These ratios remain low in the outer areas and, in fact, decrease in the Peel and York regions, while the Central Area becomes even more employment intensive.

This pattern of regional development implies a growth in long-distance commuting into the Central Area unless a greater proportion of future employment growth can be directed to the outer areas. To a more limited extent, increased residential development in the Central Area would also help offset the need for long-distance commuting.

5.0 REVIEW OF FINDINGS OF ARTS STUDY

5.1 The Problem Defined

"The demand/capacity analysis suggests that the only transit capacity problems that can be expected by 1991 will be at the Bloor/Yonge Station and on the Yonge line south of Bloor" (Surface Transit report, p.18). To overcome this operational problem the ARTS Study recommends the approval in principle of the $400 m. relief line. The Sheppard Avenue line, on the other hand, is recommended on strategic grounds to shape the long-term pattern of land use development in the Metropolitan Toronto area.

Clearly, the relief line and the Sheppard Avenue line are being proposed in relation to two different sets of issues. The Sheppard Avenue line has to be assessed in relation to Metro's broad land use/transportation planning objectives and can only be evaluated in a long-term perspective. In contrast, the relief line is being proposed on purely operational grounds to overcome a particular, near-term capacity problem anticipated on the Yonge line and, in this context, can be evaluated in a relatively narrow "cost-effectiveness" framework.

Defining the evaluation of the relief line in cost-effectiveness terms simplifies the issue, whereas the case for the Sheppard line rests upon a more intangible and distant set of factors which are more difficult to settle. This preliminary report primarily focusses on the question of the relief line since it has the most immediate and direct effect on the City and its planning policies.

5.2 The Extent of the Problem

Assuming a 60,000 increase in office employment in the Central Area, the ARTS simulation model predicts that, without other transit improvements, peak-point ridership on the Yonge subway line will increase from 31,000 passengers per hour (derived from EX.4, Summary, p.11) in 1979 to 35,200 passengers per hour in 1991 (Summary, p.12). However, as the Summary report points out, the model predicts annual, average conditions and peak-point ridership on the existing subway system is about 15% greater during heavy season periods (Sept.-March) than the twelve-month average. Consequently, the simulated 35,200 passenger volume figure is factored up by 15% to produce a "design hour" volume of 40,500 passengers per hour at the peak-point on the Yonge subway in 1991.

It is further suggested (Summary, p.13) that the 40,500 figure might increase by a further 10% to take account of possible long-term trends, such as increased parking costs and increased auto operating costs, which would encourage an overall modal shift in favour of transit. Under these conditions, 1991 peak-point demand on the Yonge line might rise to 44,000 passengers per hour.

By factoring-up the simulated peak-point volumes by 15% and a further 10%, the initial predictions of a 4,200 passenger increase in 1979-1991 peak-point demand on the Yonge line is successively expanded to a 9,500 and then a 13,000 passenger per hour increase. These latter increases far outweigh the initial, simulated figure based on the 60,000 employment increase estimate and indicate the sensitivity of the ARTS Study results to other assumptions, beyond those of the simulation model, regarding seasonal peaking on the subway and other factors effecting the general trend in the modal split.

The Transit Operations report (p.2) defines the "operational" capacity of the Yonge subway line as 37,800 passengers per hour per direction, on the assumption of minimum headways (time between trains) of 127 seconds. However, a "preferred" capacity figure of 33,000 passengers per hour per direction is also given. In relation to this preferred capacity figure, it might be noted that in 1981 peak-point volumes on the Yonge line, based on the average of three heaviest monthly counts, were around 35,200 passengers per hour and 15-minute surges of over 10,000 passengers were observed. At these volumes, peak-hour trains on the Yonge line are generally acknowledged to be heavily crowded.

When determining expected 1991 shortfalls in capacity on the Yonge line, the ARTS Study employed the preferred capacity figure of 33,000 passengers per hour and applied this against the 1991 demand estimates of 40,500 and 44,000 passengers per hour described above. In this manner, the ARTS report concludes:

> "A shortfall of 7,000 - 10,000 peak-hour direction person trip capacity is forecast for the Yonge line south of Bloor Station ...." (Surface Transit, p.18).

If, however, the 1981 peak levels of subway congestion are accepted (i.e. 35,200 passengers per hour) and the less hypothetical 1991 ARTS demand projection adopted (i.e. 40,500 passengers per hour), then the shortfall in peak-point capacity on the Yonge line might be more in the neighbourhood of 5,000 passengers per hour.

Apart from an on-line capacity problem on the Yonge subway over the peak-point, Bloor/Wellesley link, the ARTS Study concludes that by 1991 the Bloor-Yonge Station will also be operating beyond capacity during peak periods. The anticipated problems at the Bloor-Yonge Station are briefly described on page 24 of the Transit Operations report. The ARTS Study presents the Yonge line problem as one of both train and station capacity.

5.3 The Cause of the Problem

Assuming a 60,000 employment increase, the ARTS report attributes the 1991 capacity problems on the Yonge line south of Bloor and at Bloor-Yonge Station to "... demand originating primarily on the Danforth line east of Bloor Station and to a lesser extent on the Yonge line north of Bloor" (Surface Transit, p.18). Peak-hour increases in a.m. inbound subway trips over the 1979-1991 period are estimated to be:

2,500	Yonge subway north of Bloor
6,500	Spadina subway south of St. Clair West
3,000 to 3,500	Bloor subway
3,000 to 4,000	Danforth subway

(Source: Demand report, p.27: figures increased 15% to represent peak-season ridership)

As the ARTS Study points out, some of the increase from the east in 1991 is "... as a result of the reorientation of travel from the Yonge line to the Danforth subway via the new Scarborough Town Centre line" (Surface Transit, p.4).

In absolute terms, however, the forecasted increases on the Danforth line are not great nor very different from those on the Bloor line. Presumably, most of this projected 3,000 - 4,000 peak-hour increase on the Danforth line results from population increases in Scarborough, the only area in Metro with remaining

capacity for significant residential growth. Exhibit 1 in Appendix C of the Surface Transit report illustrates the forecast changes in Central Area work travel orientation within Metropolitan Toronto Planning Districts. This Exhibit, in fact, indicates a weakening in Central Area work travel orientation from the east and a strengthening from the west.

The ARTS report seems to imply, however, that increases in peak-hour ridership on the Danforth line are particularly critical since they are most likely to contribute to additional transfer movements at the crowded Bloor-Yonge Station and to add passengers onto the heavily loaded Yonge line south of Bloor. However, it should be pointed out that, although the 1991 forecasts show the Yonge line, at its peak-point south of Bloor, to be carrying 40,500 passengers per hour, the corresponding figure on the University line immediately south of Bloor is only 28,500 passengers per hour (see Ex. 15, Demand report, p.33).

In this light, the need to build an expensive relief line seems questionable when adequate north-south capacity appears available on the University line during projected 1991 rush-hour conditions. In addition, the University line provides more direct access to the Downtown area between Bloor and Front Streets than does the proposed relief line with its single focus on Union Station. The success of the relief line in attracting riders off the Danforth subway would seem to be at least partly dependent upon future employment growth in the Waterfront area. The projected 1979-91 increases in peak-hour passenger volumes on the Danforth line are not large in absolute terms and the relief line seems to be attractive to only those existing users whose current employment location is within walking distance north of Union Station.

These remarks are not intended to diminish the seriousness of the crowding problems on the Yonge line or to suggest that future Central Area employment growth will not further aggravate this situation but, in considering possible alternative solutions, it is important to have as clear an understanding of the cause and extent of the problem as possible. The ARTS Study acknowledges the difficulty of distributing projected trip increases to particular transportation facilities and notes that "... trip distribution errors are relatively more important in relation to the definition of specific road and transit capacity problems, such as the capacity problems identified on the subway, than for the definition of general problems...." (Surface Transit report, Appendix C, p.4). Also, the implicit emphasis of the ARTS Study on transit issues within the Metropolitan area may have resulted in an over-emphasis of the Yonge line capacity problem and an under-statement of the emerging regional transportation problem. Further careful and more detailed study is required before the

need, effectiveness or priority of the relief line can be satisfactorily determined.

5.4 Alternative Solutions

5.4.1 Existing Subway System - given the focus of the problem is an anticipated shortfall in capacity on the Yonge line and at the Bloor-Yonge interchange, it seems appropriate to undertake a study to determine what, if anything, can be done to improve the capacity of the existing system. This represents a direct attack on the identified problem. Clearly, such a study needs to look at both the problems of reducing headways on the Yonge line to improve on-line capacity and of improving station capacities to handle higher volumes of traffic. Given the relatively small shortfall in capacity (c. 5,000 passengers per hour) anticipated on the Yonge line by 1991, there may be the possibility to make adjustments to the existing subway system to accommodate this scale of ridership growth. Such adjustments might involve considerably less cost than the capital outlay associated with the proposed relief line.

Included in such an analysis should be a study of how to obtain more balanced peak-hour flows over the Yonge and University lines south of Bloor Street. The ARTS Study indicates that by 1991 spare capacity still remains on the University line, though the Yonge line is operating at above capacity. Recommendation 3(b) of the ARTS Study recommends that the TTC be requested to report on the feasibility of implementing various measures to increase the capacity of the existing subway system.

It seems advisable that the results of such a study should be made known before any final decisions on approving a proposed relief line is made. The ARTS Study appears emphatic on the question of subway capacity, stressing that headways cannot be reduced below the 127-seconds leveland pointing out the extensive nature of the changes that would be required to increase the transfer capacity of the Bloor-Yonge station. From this point of view, the 38,700 passengers per hour per direction "operational" capacity figure seems firm.

5.4.2 Surface Transit Improvements - the ARTS Study, in looking at the "no build" option, identified a number of possible improvements to surface transit services that might be made to alleviate anticipated peak-hour congestion problems on the Yonge subway line. The Surface Transit report looked at three classes of surface relief options:

A. Intermediate Point Relief

A.1 - Downtown Sherbourne Express Bus - this bus would connect from Castle Frank Station on the Danforth line to the Downtown area via Richmond-Simcoe-Adelaide Streets and could provide up to 3,600 persons per hour capacity. This service is regarded as providing "a good test" of the intermediate point relief concept.

A.2 - Broadview-Downtown Express Streetcar - an express streetcar operating between Broadview Station on the Danforth line and a downtown loop (defined by Church, Wellington and King Streets) via Broadview, Queen and King Streets. This is regarded as a more long-term option that could be introduced if the Sherbourne express bus proved successful. The local function of the existing Broadview streetcar service would be replaced by buses. This express streetcar could carry as many as 10,000 persons per hour and even more with articulated vehicles.

A.3 - Spadina Light Rail Transit (LRT) - this proposal has streetcars operating on reserved lanes with grade-separation at major intersections (College, Dundas, Queen and King Streets) and involves the rebuilding of the Spadina bridge across the railway tracks and additional track work and looping facilities at the southern end. A full, grade-separated LRT option, such as proposed in the Surface Transit report, could have a capacity of up to 15,000 persons per hour with relatively fast travel times. However, in the Surface Transit report, the Spadina LRT facility is seen to be of limited use in providing relief to the Yonge line unless there is development in the Waterfront area.

A.4 - Improved Bay Bus - the Surface Transit report concludes that "... even with reserved lanes Bay would not appear to serve a 'subway surface relief' function" (p.15).

B. Suburban Intercept Relief

B.1 - Don Mills Express Bus - an express bus operating on Don Mills Road between Steeles Avenue and Overlea Boulevard and thence to and from the Downtown via the Don Valley Parkway and a Richmond-Simcoe-Adelaide loop. Such a service would require reserved bus lanes north and south on Don Mills between Steeles and the Don Valley Parkway and possibly ramp priority treatment at the Don Mills-Don Valley Parkway interchange. The ARTS Study concludes that the Don Mills express option is "worthy of further consideration" (Surface Transit, p.15).

C. Suburban Arterial Surface Transit

The ARTS report discusses some semi-express bus routes in suburban areas which might be successful in re-orienting some Downtown travel from the Yonge line over to the Spadina/University Avenue subway.

This list of options indicates the scope for incremental improvements to surface transit to provide relief to the Yonge subway. While parts of the ARTS analysis of these options might appear questionable, such as the need to grade-separate the Spadina LRT at major intersections and the curt dismissal of the Bay bus, the major criticism of this aspect of the study is the failure to evaluate the cost-effectiveness of the surface transit options in relation to the rapid transit alternative.

The ARTS Study presents comparative evaluations only between the four rapid transit options (see Ex. 8, Summary, p.27). From the study, it appears that the major drawback to the surface transit option relates to the possible need for priority measures that would result in increased competition with autos for available peak-hour road capacity. Consequently, the Surface Transit report relegates the surface transit improvements to further study by the MTTPC in its "Roads System Review" to assess the costs and benefits of transit priority. However, these costs and benefits should not only be assessed in relation to the needs of other road users but also in relation to the need for alternative, new rapid transit services.

The ARTS Study seems to attribute little value to the possible role of surface transit improvements in delaying the need for investment in major fixed-rail services into the Central Area. The study implies that surface transit improvements will be needed anyway and, since sooner or later an additional rapid transit facility serving the Central Area will be required, the surface transit option is not of long-term consequence. However, as discussed later in this report, the timing and priority of major investments in rapid transit facilities can be important to the achievement of certain long-run planning objectives and, in this context, the role of incremental surface transit improvements in influencing when the need for such major investments are required can be critical.

5.4.3 The Waterfront Option - The ARTS Waterfront report provides a separate analysis of 1991 Central Area travel requirements. This analysis derives the demand for peak-hour work trips on the basis of expected levels of office development, with particular attention being given to the development potential of the area south of Queen Street. Table 3, p.11, of the Waterfront report lists the developments included in the area south of Queen

Street and comprises all developments under construction and proposed, along with the permitted levels of development in the east end of the Railway Lands, the Central Bayfront and the CBC site. These figures total 1 690 000 sq. m (18.2 m. sq.ft.) and are estimated to accommodate a 67,600 increase in employment, higher than the 1979-1991 60,000 increase assumed elsewhere in the ARTS Study.

When allowance is made for the transit capacity required by potential Central Area office development north of Queen Street, the Waterfront report determines that there is sufficient residual capacity to conclude "... that the transit system could be expected to handle volumes in the study area at least to 1991, although ultimately there will be a need for additional transit capacity" (p.13). This conclusion is qualified by the observation that the pattern of future trip increases will not necessarily match the pattern of available transit capacity and there could be serious congestion problems at certain points on the subway and GO rail systems. However, to overcome these problems, the report concludes:

> "A Waterfront rapid transit facility combined with surface transit improvements (such as the Spadina LRT, Sherbourne express bus and others) could be the most cost-effective option if proven feasible. This option would not preclude the construction of a possible radial rapid transit line in the future, and should be studied further ...." Waterfront report, p.29).

This "Waterfront Option", as identified by the ARTS Study, is interesting because it services a higher level of Central Area employment growth than generally assumed elsewhere in the study without the need for the recommended relief line. With the addition of a Waterfront rapid transit line in association with the introduction of a Spadina LRT service and other surface transit improvements, sufficient transit capacity is provided to accommodate Central Area employment growth beyond 1991. However, these conclusions of the Waterfront study are not carried over into the final recommendations of the ARTS Study as contained in the Summary report.

5.4.4 The Regional Option - the ARTS Study, on a number of occasions, alludes to the anticipated increase in regional commuting across the Metro boundary over the 1979-91 period, but does not directly address the problems to which this trend may give rise. Recommendation 6 of the Summary report consigns this issue to the MTTPC for future discussion with the Province and the Regions.

The Summary report notes that inbound peak-hour GO rail trips to the Central Area are expected to increase by 63% over the 1979-91 period and "... given the growth in core-oriented trips from beyond Metro, substantial increases in GO capacity could provide relief for congested TTC rapid transit facilities serving the Central Area ...." (p.26). Similarly, the Demand report (p.38) observes that increased GO capacity could reduce road capacity deficiencies in the west and reduce anticipated subway loadings.

As noted earlier in this report, the projected pattern of future trip growth suggests that regional transportation questions are likely to be as important as those related to the development of transit services within the Metropolitan area. Unless there is a change in current population and employment trends to put more jobs in the Regions, then increases in long-distance commuting can be expected and, in particular, the ARTS Study predicts:

> "The forecast auto travel demand will create severe demand/capacity problems on east-west streets within the Borough of Etobicoke and the west end of the City of Toronto, and on north-south streets in the Borough of York and the City of North York" (Surface Transit report, p.18).

In view of these facts, it seems that this emerging regional transportation problem requires further study and the future role of the GO system, both rail and bus, needs to be more directly addressed than in the ARTS Study, before any final decision on future rapid transit lines is made.

6. ON-GOING STUDIES

Staff of the City Planning and Development Department are involved in an on-going analysis of future Central Area traffic demands. As in the ARTS Waterfront report, this analysis is based on projected increases in office development in the Central Area over the medium-term (say, 10-year) future. In recognition of the difficulty in predicting the future role of office development, the City analysis is based on four scenarios of future office development, labelled Base, Low, Median and High estimates.

These various development scenarios provide a projected range of future employment increases. These employment increases are, in turn, taken to determine a corresponding range in future peak-hour travel demands. By developing ranges of floor space, employment and trip increases in this manner, a better appreciation of the sensitivity of the traffic analysis results to changes in the assumptions underlying the study can be gained.

The City's Central Area Travel Analysis (CATA) uses the same population projections for the Metro Region as the ARTS Study. Based on these projections, the CATA Study reveals a growth in Central Area travel demand from the west and north-west.

The total existing office floor space in the Central Core Area in January 1981 was estimated at 4 831 000 sq. m (52.0 m. sq.ft.), and the CATA Study defined four development scenarios in relation to this base figure:

i) Base Estimate

This includes all projects listed as being approved by Council through to the building completion stage. This gives a total additional office floor space over the existing of .99 m. sq.m (10.66 m. sq.ft.)

ii) Low Estimate

Onto the base estimate Harbourfront and Harbour Square developments have been added. Total additional floor space = 1.21 m. sq. m (13.02 m. sq.ft.).

iii) Median Estimate

Half the permitted development potential of Railway Lands, and half of the permitted development potential of the Central Waterfront are now included. Total additional floor space = 1.51 m. sq. m (16.25 m. sq.ft.).

iv) High Estimate

This includes all the permitted Railway Lands and Central Waterfront development, and also includes these proposals in the Central Area that have been submitted and are under discussion but have not yet received Council approval. Total additional floor space = 2.07 m. sq. m (22.28 m. sq.ft.).

The developments included in these estimates are listed in Appendix C, along with a Map specifying their location.

Table 1 below provides the employment estimates assocated with each development scenario:

TABLE 1: EMPLOYMENT *

Floor Space/Worker	27.5 metres		25.0 metres (1981 existing)	
Occupancy Rate	.89	.95	.89	.95
Development Scenario				
Base	309	321	329	342
Low	316	329	336	351
Median	326	340	347	362
High	344	358	367	382

* In 000's of workers

The 1981 base employment figure for the Central Area was 297,000 jobs and thus the ARTS Study estimate of an additional 60,000 jobs could represent a median to high level of development in terms of the CATA scenarios:

Given the variable factors involved in predicting peak-hour trips from projected development trends:

- developments expected in the Central Area;
- office space vacancy rate;
- floor space per worker ratio;
- absenteeism (vacation, sickness, part-time, etc.);
- walk/bicycle factor;
- peak-hour factor; and
- modal split factor,

the ranges of employment totals produce a corresponding range in the volume of additional person trips (auto & transit) into the Central Area in the peak hour. Assuming the most extreme variations in the factors listed above, this range could be as wide as from 10,000 to 47,000 additional person trips. In the Waterfront report, the ARTS Study concludes that an employment level comparable to the "High" scenario described above produces a level of trip increase towards the high end of the range identified by the City's CATA study.

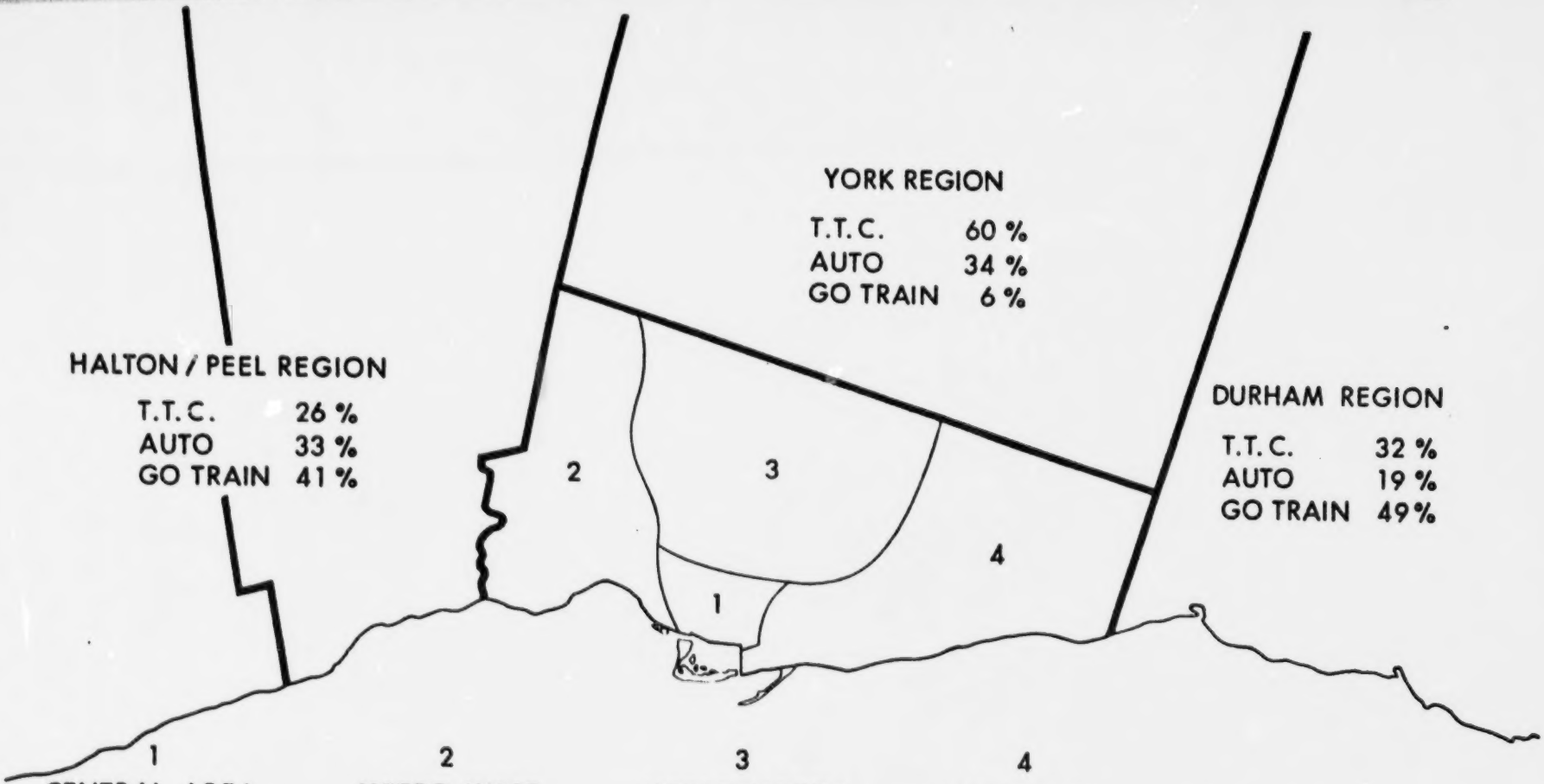
The mode of travel these trips will take will vary depending on their home location. The estimated average modal split pattern for 1981 for trips to the Central Area from the Metropolitan regions is described on Map 4. Relating this modal split pattern back to the expected pattern of population increases suggests that, if future increases in work trips to the Central Area are related to areas of population increase, the modal split for total person vehicle trips into the Central Area could shift from transit to auto. As the ARTS Study acknowledges, a significant increase in automobile travel from the west can be expected under these conditions.

The TTC network, within Metro, is serving areas that will see little residential growth apart from parts of Scarborough. Consequently, trip increases to the Central Area by subway seem more likely to arise from an extension of the TTC catchment area to the areas of regional population growth than by general trip growth within Metro.

Overall, the CATA Study concurs with the ARTS Waterfront report in the likely level of travel demand to the Central Area generated by the assumed level of development. Also, like the ARTS Study, the Yonge line and the Bloor-Yonge interchange are seen as the critical congestion points on the existing subway system. As the ARTS Study concludes, a Waterfront rapid transit line on its own is found to be of little help in serving employment growth in this area and may only serve to further focus demand on the Yonge line and Union Station.

Uncertainties regarding the timing and scale of development in the Waterfront make it particularly difficult to predict 1991 transportation improvement needs in the Central Area. A decision on the relief line proposed in the ARTS Study, or any other proposed rapid transit line into the Central Area, should not be taken independently of the land use planning objectives for this area.

The CATA Study gives added emphasis to the regional concerns raised in the ARTS Study, and City Planning staff are currently studying further the possible implications of future population and employment trends for GO commuter and extended TTC services, and the demand to increase road capacities into the Central Area. These trends have their basis in current regional land use planning policies and a full evaluation of the regional transportation issue should properly include a review of these policies.



1 CENTRAL AREA		2 METRO WEST		3 METRO NORTH		4 METRO EAST	
T.T.C.	88 %	T.T.C.	74 %	T.T.C.	73 %	T.T.C.	63 %
AUTO	12 %	AUTO	24 %	AUTO	26 %	AUTO	32 %
GO TRAIN	0 %	GO TRAIN	2 %	GO TRAIN	1 %	GO TRAIN	5 %

* EXCLUDES OTHER MODES (WALKING, CYCLING, TAXIS, GO-BUS) WHICH REPRESENT 5% OF ALL TRIPS

SOURCE: 1975 CENTRAL AREA PARKING AND LOADING STUDY UPDATED IN RELATION TO RIDERSHIP AND AUTO COUNTS

REF. No. 334/02170

MAP 4

ESTIMATED 1981 MODAL SPLIT FOR CENTRAL AREA EMPLOYEES BY ZONE OF RESIDENCE *

CITY OF TORONTO PLANNING AND DEVELOPMENT DEPARTMENT

POLICY RESEARCH AND INFORMATION — SEPTEMBER, 1982

7.0 SUMMARY AND CONCLUSIONS

The ARTS Study analyzes 1991 travel demands to identify the possible need to begin planning now for additional rapid transit services in the Metropolitan area. The Study concludes there is the possible need for two such lines, one an east-west line along Sheppard Avenue connecting the North Yonge Centre to the Scarborough Town Centre and the other a downtown "relief" line running from the Donlands Station on the Danforth subway line down the existing rail corridor to Union Station. Each line is estimated to cost around $400 m. to build. The two lines are proposed for different reasons: the Sheppard line to support long-term, strategic planning objectives and the relief line to overcome more immediate operational problems which are anticipated to arise on the Yonge subway line south of Bloor and at the Bloor-Yonge transfer station. In this context, the Sheppard line has to be evaluated in broad, social benefit-cost terms whereas the relief line can be viewed more narrowly in terms of its cost-effectiveness in overcoming a particular operational problem. This interim report has largely avoided the more difficult question of evaluating the proposal for the Sheppard line and the analysis has concentrated more on the proposal for the relief line since it has the most direct effect on the City and its planning policies.

The ARTS Study predicts the need for a relief line on the basis of a 60,000 employment increase in the Central Area over the 1979-91 period. It is estimated that such an employment increase results in above-capacity demands being placed on both the Yonge subway and the Bloor-Yonge Station. The City's analysis concludes that this employment increase is not infeasible and it is to be expected that at this implied level of development, which is close to the original, lower transportation capacity estimate of the Central Area Plan, that the Yonge subway will experience both on-line and station capacity problems. However, when considering the cost-effectiveness of the proposed relief line in solving these anticipated operating problems on the Yonge subway, a number of questions arise which challenge the efficacy of this particular proposal.

First, there is the question of whether the 1991 estimate of the shortfall in capacity on the Yonge subway justifies a $400 m. expenditure on the relief line. The ARTS Study estimates this shortfall to be between 7,000 to 10,000 peak-hour trips, but using the same analysis an equally reasonable estimate of 5,000 can be derived. A second question is whether the relief line is located in the right place. The ARTS Study attributes the problems on the Yonge subway primarily to demand originating on the Danforth line which adds to the transfer movements at the Bloor-Yonge Station and to the passenger loads on the Yonge line south of Bloor.

Increased ridership on the Danforth line presumably results from anticipated population increases in Scarborough and, although such increases appear possible, they are relatively insignificant in comparison to the population increases forecast in the areas beyond Metro, particularly to the north and west in the Regions of Peel and York. In addition, the attractiveness of the relief line, with its single focus on Union Station, seems at least partly dependent upon future employment growth in the Waterfront area.

Related to these questions of the need for and location of the proposed relief line, is the issue of its cost-effectiveness in relation to the other "relief" alternatives. The recommended TTC study of means of increasing the capacity of the existing subway system should be completed and discussed before a final decision on the relief line proposal is taken and this study should include an analysis of how better use can be made of the spare capacity available on the University subway line. Improvements to the existing system, if feasible, may be a far more cost-effective solution than building an entire new line. This report criticizes the ARTS Study for its failure to compare identified surface transit relief options in cost-effectiveness terms with the relief line proposal. A number of less expensive surface transit options, such as the Spadina LRT and the Broadview express streetcar service, look promising and should be evaluated further at this stage and a more positive attitude to transit priority measures on City roads should be adopted. Interestingly, the ARTS Background report on the Waterfront concludes that one option based on a Waterfront rapid transit line and surface transit improvements, such as the Spadina LRT and the Sherbourne express bus, could provide sufficient transit capacity to accommodate Central Area employment growth beyond 1991. However, this conclusion is not carried over in the recommendations of the final ARTS Summary report.

With these reservations, the proposed relief line appears as one possible, long-term option to serve employment growth in the Central Area, particularly the Waterfront and, perhaps, this option, since it is one of the few possible routes for a new rapid transit line into the Downtown, should be protected, though not endorsed. A final decision on this issue should wait until our total review is completed.

Also, it has to be recognized that although the relief line is being proposed on operational grounds, a transit investment of this magnitude will have long-term, strategic, land-use planning implications. For example, the approval in principle today of the relief line to Union Station would greatly affect the current land-use planning process in the Waterfront. A decision on such a major transit facility should, in this context, logically flow

from land-use planning considerations and not precede them. At the present time, staff are involved in negotiations with CN Rail and the Toronto Harbour Commissioners regarding development plans for their respective holdings in the Waterfront. In the larger context, a decision to begin immediately planning a new rapid transit line into the Central Area could weaken the chances of achieving certain long-term planning objectives in the Metropolitan area and could be interpreted as an abandonment of the deconcentration policy. At this relatively early stage in the process of deconcentration, a new Downtown transit line might divert employment growth away from the planned subcentres and create increased commercial development pressures in the Central Core. This issue is being reviewed by staff and will be reported upon more fully in my December, 1982 report.

The proposal for the relief line, although it is based on operational concerns and can be debated in these terms, must also be viewed in a broader perspective and related back to the whole policy of deconcentration. In this context, the questions of timing and priority can be critical. The ARTS Study does not conclude which of the two lines proposed, the Sheppard or the relief, are of priority, and there is even the suggestion they might both be built at the same time. However, as the ARTS Study notes, the timing of major transit improvements into the Central Area depends on the rate of employment growth in this area and the ability of the existing subway and GO-transit services, along with improved surface transit operations, to accommodate this growth. The ARTS Study, and the City's analysis supports this, raises some doubts over the need for a new rapid transit line into the Central Area by 1991 if other, more incremental, capacity improvements are undertaken in the meantime. This suggests there may well be the time to make major transit improvements into the Central Area of second priority and to enable strategically preferable transportation investments which directly support the policy of deconcentration to be given first consideration.

When evaluating overall transit priorities, the ARTS Study, and to a greater extent the City's Study, point to an emerging transportation problem at the regional level associated primarily with strong, continued employment growth in the Central Area and disproportionately large population increases in the Regions of Peel and York. This pattern of growth has implications for GO-transit planning and the capacity of the regional road system and these considerations could lead to a re-evaluation of transit proposals recommended in the ARTS Study. Further study of this regional question is needed, including not only a review of transportation issues but also current regional land-use planning policies which are at the root of the problem.

The ARTS Study also addresses the proposal for a Waterfront rapid transit line and concludes that such a line should be considered only in conjunction with additional facilities serving the Downtown and providing relief to the Yonge subway. Without these additional connections into the regional transit system the Waterfront line, on its own, will be only of service to recreational users and, in fact, could make matters worse on the Yonge line for peak-hour commuters. These conclusions are supported by the City's analysis.

A point on which the ARTS Study is largely non-committal is the type of technology proposed for the new rapid transit lines discussed in the reports. For comparative purposes in evaluating the various rapid transit options, RTS technology is assumed. I have, in previous reports, raised serious concerns over the assumption that this type of technology is the only applicable one for new transit services in Metro and, at this stage, there should be no implied endorsement by the City of this transit mode.

Recommendations:

1. That the Committee receive this report as an interim commentary on the joint Metro/TTC "Accelerated Rapid Transit Study", pending the submission of a final position paper in December, 1982.

2. That the Committee defer further consideration of the "relief" line proposed in the joint Metro/TTC "Accelerated Rapid Transit Study" until the recommended TTC studies on surface transit improvements in the Central Area and the feasibility of increasing the capacity of the existing subway system are completed and have been reviewed by City staff.

3. That this report be transmitted, for information, to the Toronto Transit Commission, the Corporation of Metropolitan Toronto, the Area Municipalities and the Regions of Halton, Peel, York and Durham.

Stephen G. McLaughlin,
Commissioner.

GS/fs

APPENDIX A

RESPONSE (JULY 8, 1982) OF THE METROPOLITAN COMMISSIONER OF PLANNING TO THE QUESTIONS POSED BY THE METROPOLITAN ECONOMIC DEVELOPMENT AND PLANNING COMMITTEE AT ITS MEETING OF JUNE 16, 1982.

Q.1 Recommendation No. 2 refers to a "Feasibility Study of the proposed Waterfront line from Union Station to Exhibition Place - Who will conduct that study?

Response: Recommendation No. 2 requests authority for the Metropolitan Toronto Technical Transportation Planning Committee (MTPC) to undertake a single study which would deal with the feasibility of both the proposed Waterfront line and the 'relief' line from Union Station to the Danforth subway.

Q.2 Is the study mentioned in Recommendation No. 2 the same as that which was before the Committee on October 28, 1981, in the form of the "Development of the Toronto Waterfront ICTS Proposal"?

Response: The combination of this study with a feasibility study for the 'relief' line will broaden the scope of the original study proposal. The Economic Development and Planning Committee at their meeting on June 16, 1982, authorized the TTPC to prepare terms of reference and cost estimates for the feasibility studies and report back to the Committee at the time the various comments received on the Rapid Transit Study are before the Committee.

Q.3 What is the status of that proposal?

Response: Consideration of the Toronto Waterfront ICTS study proposal submitted last Fall has been deferred by the Economic Development and Planning Committee (at its meeting on January 20, 1982) pending completion of the ARTS study. Since a deadline of December 31, 1982, has now been set for the receipt of comments on the ARTS study from the Area Municipalities, consideration of the Waterfront ICTS study proposal will not take place until some time in 1983 when Council considers the other feasibility studies.

Q.4 The Economic Development and Planning Committee authorized that a search be undertaken for a Project Coordinator for the Waterfront ICTS Project. What is the status of that search?

Response: A search for a project coordinator was begun in late 1981, however the search was halted following the Economic Development and Planning Committee's decision to defer consideration of the study on January 20, 1982.

Q.5 Is the proposal for a feasibility study of the proposed Waterfront line being referred to the Area Municipalities along with those of the other lines?

Response: Recommendation No. 2 of the June 8, 1982 report (quoted below has been referred to the Area Municipalities for comment by December 31, 1982:

Recommendation No. 2

"the TTPC be authorized to undertake feasibility studies on the aforementioned two lines; the study of the 'relief' line to be combined with a feasibility study of the proposed Waterfront line from Union Station to Exhibition Place which would include an assessment of options for extending the line north-westerly to the Bloor subway."

APPENDIX B

1979-1991 POPULATION AND EMPLOYMENT PROJECTIONS USED IN THE ARTS STUDY

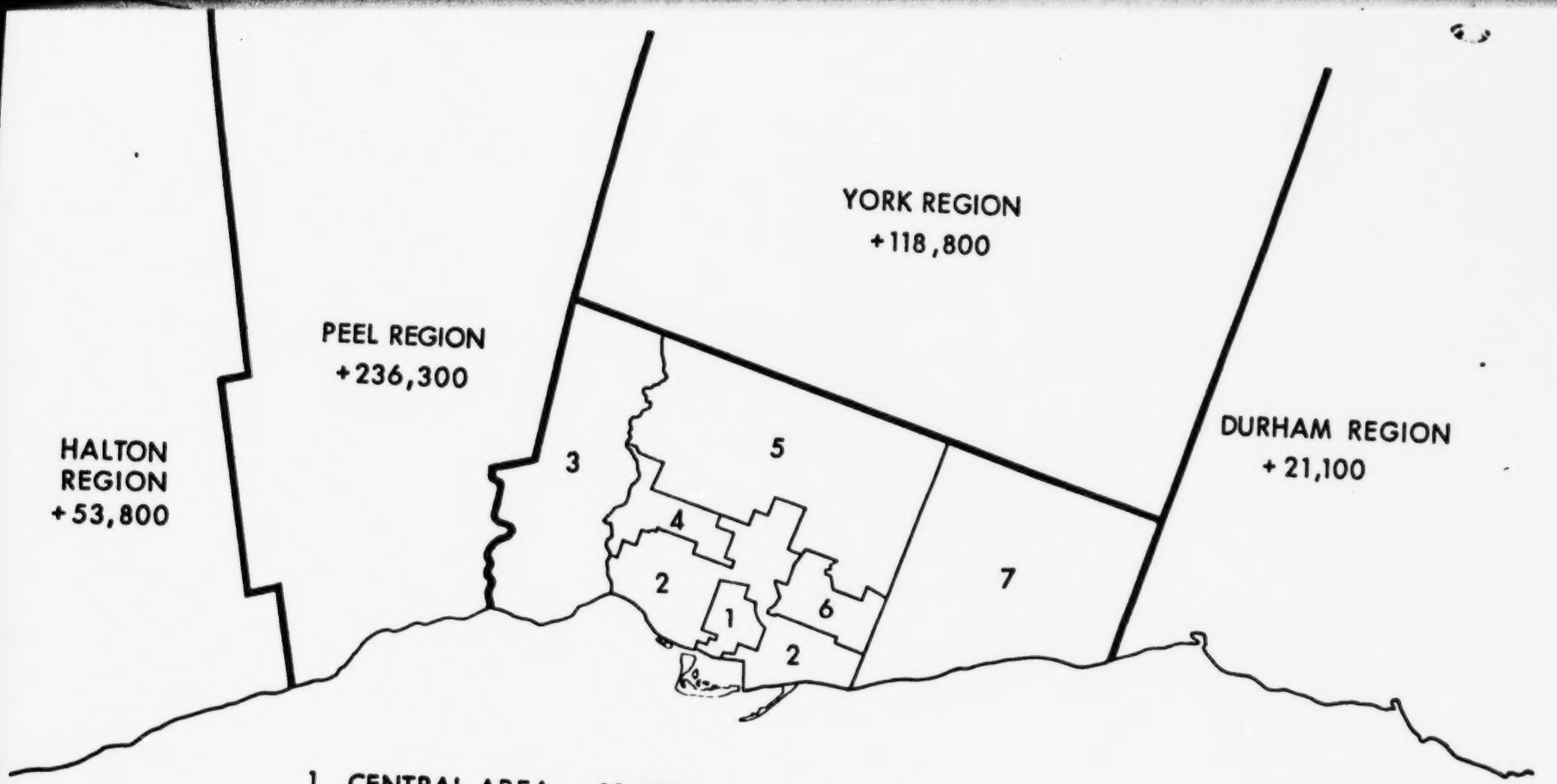
(Contains Table B.1 and Maps B.1 and B.2)

TABLE B.1

POPULATION INPUT DATA

	1979	1991	Change 1979 - 1991	
Planning District 1	115,131	128,600	+ 13,469	(+ 11.7%)
City of Toronto	606,061	600,000	- 6,061	(- 1.0%)
Borough of York	134,921	131,000	- 3,921	(- 2.9%)
East York	100,674	100,500	- 174	(- 0.2%)
Etobicoke	291,060	294,000	+ 2,940	(+ 1.0%)
North York	557,421	565,000	+ 7,579	(+ 1.4%)
Scarborough	414,347	455,300	+ 40,953	(+ 9.9%)
Metro Toronto	2,104,484	2,145,800	+ 41,316	(+ 2.0%)
Durham Region	59,569	80,000	+ 21,131	(+ 35.5%)
York Region	192,248	311,000	+ 118,752	(+ 61.8%)
Peel Region	437,826	674,100	+ 236,274	(+ 54.0%)
Halton Region	123,579	177,400	+ 53,821	(+ 43.6%)
Toronto C.M.A.	2,917,706	3,389,000	+ 471,294	(+ 16.2%)

SOURCE: ARTS Demand report, Exhibit 5.



1	CENTRAL AREA	+13,500
2	TORONTO	- 6,100
3	ETOBICOKE	+ 2,900
4	YORK	- 3,900
5	NORTH YORK	+ 7,600
6	EAST YORK	- 200
7	SCARBOROUGH	+41,000

* FIGURES ROUNDED TO NEAREST HUNDRED

REF. No. 334/02170

MAP B.1

A.R.T.S. PROJECTED POPULATION CHANGES 1979 TO 1991*

CITY OF TORONTO PLANNING AND DEVELOPMENT DEPARTMENT

POLICY RESEARCH AND INFORMATION

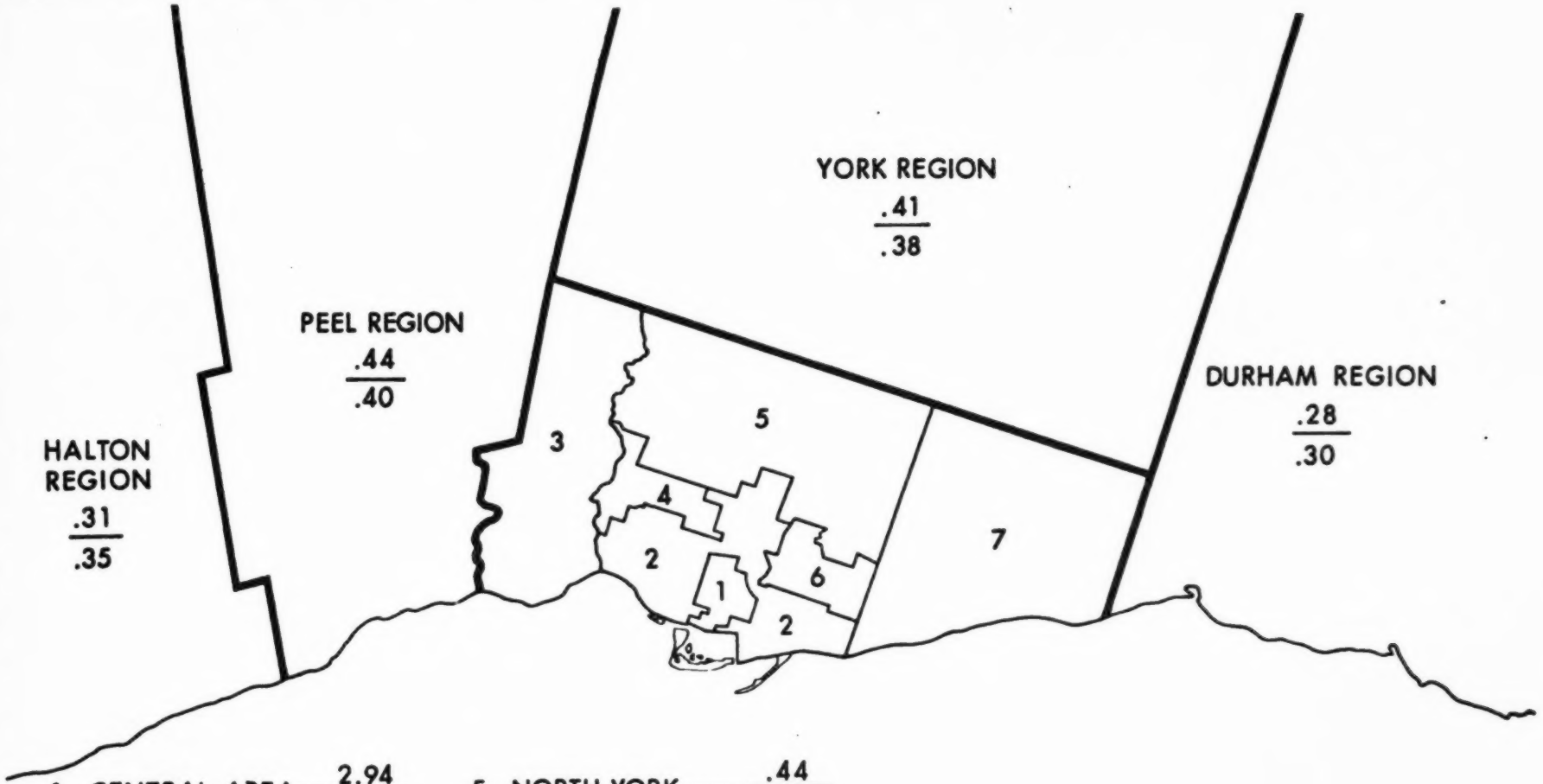
SEPTEMBER, 1982

TABLE B.2

EMPLOYMENT INPUT DATA

	1979	1991	Change 1979 - 1991	
Planning District 1	338,700	399,100	+ 60,400	(+ 17.8%)
City of Toronto	499,800	557,700	+ 57,900	(+ 11.6%)
Borough of York	43,000	42,100	- 900	(- 2.1%)
East York	33,200	38,400	+ 5,200	(+ 15.7%)
Etobicoke	146,500	147,500	+ 1,000	(+ 0.7%)
North York	243,500	255,700	+ 12,200	(+ 5.0%)
Scarborough	134,300	158,600	+ 24,300	(+ 18.1%)
Metro Toronto	1,100,300	1,200,000	+ 99,700	(+ 9.1%)
Durham Region	16,400	24,000	+ 7,600	(+ 46.3%)
York Region	78,300	119,600	+ 41,300	(+ 52.7%)
Peel Region	194,000	270,100	+ 76,100	(+ 39.2%)
Halton Region	38,200	61,600	+ 23,400	(+ 61.3%)
Toronto C.M.A.	1,427,200	1,675,300	+ 248,100	(+ 17.4%)

SOURCE: ARTS Demand report, Exhibit 5.



1 CENTRAL AREA	2.94 / 3.10	5 NORTH YORK	.44 / .45
2 TORONTO	.82 / .93	6 EAST YORK	.33 / .38
3 ETOBICOKE	.50 / .50	7 SCARBOROUGH	.32 / .35
4 YORK	.32 / .32		

REF. No. 334/02170

MAP B.2
A.R.T.S. EMPLOYMENT/POPULATION RATIOS 1979/1991

CITY OF TORONTO PLANNING AND DEVELOPMENT DEPARTMENT

POLICY RESEARCH AND INFORMATION — SEPTEMBER, 1982

APPENDIX C

OFFICE DEVELOPMENTS INCLUDED IN THE EMPLOYMENT ESTIMATES OF THE CITY'S CENTRAL AREA TRAFFIC "ANALYSIS"

TABLE C.1

LIST OF MAJOR OFFICE DEVELOPMENTS
UNDER CONSTRUCTION IN THE CENTRAL AREA
(as of January 1, 1982)

Map Reference Number	Address/Project Name	Office Space Square Metres
4	164 Cumberland St.	3 457
6	111 Avenue Rd.	3 736
7	146 Bloor St. W. (Famous Players Theatres)	5 597
8	150 Bloor St. W. (Renaissance Plaza)	24 053
11	160 Bloor St. E. (Crown Life addition)	32 758
12	200 Bloor St. E. (Manufacturer's Life addition)	34 550
15	121 Bloor St. E.	21 148
19	250 Bloor St. W.	9 440
23	444 Yonge St. (College Park Phase II)	71 532
25	365 Church St.	2 601
30	483 Bay St. (Bell/Trinity Development)	87 216
37	200 King St. W. (Sun Life, West Tower)	43 548
41	336 Bay St.	6 308
42	King St. W. (Bank of Montreal Phase 2)	87 314
43	150 King St. W. (Sun Life Building)	52 220
44	150 York St. (National Bank)	29 707
51	26 Wellington St. E. (The Wellington)	15 547
52	33 Yonge St.	45 583
56a	325 Front St. W. (Royal Bank Computer Centre, Phase 1)	31 647
58	123 Front St. W. (Marathon)	30 296
59	207 Queen's Quay W. (Terminal Warehouse)	36 265
	Total	674 523

TABLE C.2

LIST OF MAJOR OFFICE DEVELOPMENTS APPROVED BY COUNCIL
OR FOR WHICH COUNCIL APPROVAL NOT REQUIRED
IN THE CENTRAL AREA
(as of January 1, 1982)

Map Reference Number	Address/Project Name	Office Space Square Metres
1	46 Avenue Rd.	2 348
2	900 Yonge St.	5 145
10	1 St. Thomas St.	2 624
17	729 Yonge St.	4 421
20	770 Bay St.	5 871
24	380 Church St.	3 890
28	560 Bay St. (Baydas Development)	4 895
32	40 Trinity Sq.	4 207
33	25 Dalhousie St.	3 830
36	544 Queen St. E.	5 290
38	255 King St. W. (Marathon Block B)	105 423
54	171 Yonge St. (Victoria Square)	41 563
57	255 Front St. W. (Convention Centre)	23 690
62	2 Berkeley St.	5 762
63	10 Bay St.	142 602
	Total	361 561

TABLE C.3

LIST OF MAJOR OFFICE DEVELOPMENTS
FOR WHICH THERE IS AN APPLICATION FOR COUNCIL APPROVAL
IN THE CENTRAL AREA
(as of January 1, 1982)

Map Reference Number	Address/Project Name	Office Space Square Metres
3	217 Davenport Rd.	2 025
9	80 College St.	6 245
13	730 Yonge St.	2 287
14	1025 Bay St.	1 858
16	530 Church St.	4 169
18	130 Carlton St.	2 016
22	655 Bay St. (Elgin Motors Site)	27 551
26	277 Victoria St.	3 880
29	11 Centre St.	2 457
34	193 Yonge St.	3 715
35	468 Queen St. E.	25 225
39	70 University Ave.	20 802
40	145 Wellington St. W.	3 517
45	95 Wellington St. W.	11 410
46	125 Wellington St. W.	14 166
47	20 Front St. W.	5 812
48	15 Richmond St. W.	2 607
49	70 King St. E.	36 618
53	147 Yonge St.	23 557
56b	325 Front St. W. (Royal Bank Computer Centre, Phases 2 & 3)	26 730
	Total	226 647

TABLE C.4

LIST OF MAJOR PERMITTED OFFICE DEVELOPMENTS
IN CENTRAL WATERFRONT AREA

Map Reference Number	Project Name	Office Space Square Metres
60	Harbourfront (excluding Terminal Warehouse)	77 723
61	Railway Lands	514 480
64	Toronto Harbour Commission Lands in Central Bayfront	86 954
	Total	679 157

TABLE C.5

SUMMARY OF MAJOR OFFICE DEVELOPMENTS
CENTRAL AREA DISTRICTS
square metres)
(as of January 1, 1982)

Development Status	N.of Queen St.	Queen St. to Front St.	S.of Front St.	Total
Under Construction	296 088 (44%)	280 227 (42%)	98 208 (14%)	674 523 (100%)
Application Approved By Council or Council Approval Not Required	42 521 (12%)	146 986 (41%)	172 054 (47%)	361 561 (100%)
Application for Council Approval	81 428 (36%)	118 489 (52%)	26 730 (12%)	226 647 (100%)
Total	420 037 (33%)	545 702 (43%)	296 992 (24%)	1 262 731 (100%)

Note: The figures contained in Tables C.1 through to C.5 do not include development sites for which there are no formal development proposals but which are known to be potential areas of office employment growth (e.g. the C.B.C., CN Rail and Eatons sites)

MAP C.1
PROJECTS INCLUDED IN FUTURE DEVELOPMENT SCENARIOS

CITY OF TORONTO PLANNING AND DEVELOPMENT DEPARTMENT

POLICY RESEARCH AND INFORMATION

SEPTEMBER, 1982

. No. 334/02170

POOR

QUALITY

ORIGINAL